ISSN (print) 0093-4666 © 2011. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/117.239

Volume 117, pp. 239–246 *July–September 2011*

Mycena sect. *Longisetae*: a new species, a new name, and an addition

Dollymol M. Aravindakshan & P. Manimohan*

Department of Botany, University of Calicut, Kerala, 673 635, India
Correspondence to *: *dollym.aravind@gmail.com & * pmanimohan@gmail.com*

Abstract — *Mycena saloma* sp. nov. is described and illustrated from Kerala State, India. *Mycena lomavritha* nom. nov. is proposed for *Mycena indica* Manim. & Leelav., nom. illegit. The Brazilian species *M. rhaphidocephala,* previously accepted in sect. *Saccharifera*e, is accepted in sect. *Longisetae*.

Keywords — *Agaricales, Basidiomycota,* nomenclature, taxonomy

Introduction

As currently accepted, *Mycena* sect. *Longisetae* A.H. Sm. ex Maas Geest. (*Basidiomycota, Agaricales, Mycenaceae*) incorporates about eleven species that are primarily characterised by several long, needle-like, thick-walled hairs on the pileus (Desjardin et al. 2002). Additionally, these species have ascending, narrowly adnate to free lamellae, a pruinose to hispid stipe with a typically discoid base, ellipsoid basidiospores, 4-spored basidia, a hymenium devoid of pleurocystidia, a pileus margin often beset with cystidia, dextrinoid pileal and stipe trama, smooth caulocystidia that typically taper towards the apex, and a pileipellis composed of either acanthocysts or spinulose hyphae. According to Desjardin et al. (2002), southeast Asia could be the centre of diversity of this group.

During our investigations on the agaric mycota of Kerala State, India, we came across an as yet undescribed species belonging to this group that we describe here. *Mycena indica*, a species originally placed by Manimohan & Leelavathy (1988) in sect. *Saccharifera*e and subsequently transferred to the amended sect. *Longisetae* by Desjardin et al. (2002), needs a replacement name (nom. nov.) as the present one is an illegitimate later homonym (McNeill et al. 2006: Art. 53.1). A nom. nov. for this species is proposed here, along with some observations on the species. The Brazilian species *M. rhaphidocephala,*

originally placed by Maas Geesteranus & de Meijer (1998) in sect. *Sacchariferae*, has all the characteristics of sect. *Longisetae* and is accepted in the latter section here.

Materials & methods

Conventional morphology-based taxonomic methods were employed for this study. Microscopic observations were made on material stained with 1% aqueous solution of Congo red and mounted in 3% aqueous KOH. Melzer's reagent was used to observe whether the spores and tissues were amyloid. For evaluation of the range of spore-size, twenty basidiospores each from one specimen of each collection cited were measured. The herbarium acronyms follow Thiers (2011). The collections cited without herbarium acronyms are in the personal herbarium of the second author. The concept of Desjardin et al. (2002) is followed for *Mycena* sect. *Longisetae*.

Taxonomy

Mycena saloma Aravind. & Manim., **sp. nov.** PLATE 1

MYCOBANK MB 519881

Basidiomata delicata, dispersa. Pileus 1.25–5 mm latus, hemisphericus vel convexus, transluso-striatus, subsulcatus, albus, pilis erectis subtilis vestitus. Lamellae adnexae, albae, subdistantae, lamellularum intermixtae. Stipes 3.5–22 × 0.25–0.5 mm, centralis, cylindricus, transluso-albus, puberulus, basi discoideo instructus. Sporae 7.5–9.5(–11) × 3.75–5.5 µm, inaequilateraliter ellipsoideae, amyloideae, leves. Basidia 12–19 × 9.5–13 µm, subglobosa et pedicellata, 4-sporigera. Cheilocystidia et pleurocystidia nulla. Trama pilei et lamellarum ex hyphis dextrinoidei composita. Hyphae pileipellidis 2–11.5 µm latae, echinulatae, spinulis minutis instructae. Pileosetae 60–780 × 15–30 µm (ad basim) × 10–11 µm (ad apicem), hyalinae, crassitunicatae. Cystidia margine pilei 17–82 × 6.5–20 µm, clavata vel fusoidea, tenuitunicata, spinulosa. Caulocystidia 92.5–125.5 × 15–33 µm, flexuoso-cylindrica vel fusoidia, hyalina, tenuitunicata, leves. Hyphae omnes fibulatae.

TYPE: INDIA, Kerala State, Idukki District, Munnar, Kanniamalai Estate: 14.VIII.2010, **holotype:** Dollymol DM461 (L).

ETYMOLOGY: *saloma* (Sanskrit), hairy

Basidiomata very small, delicate. Pileus 1.25–5 mm diam., up to 3 mm high, initially parabolic, becoming hemispherical to convex with age; surface initially pure white, becoming off-white with age, with prominent white hairs up to 0.5 mm long that are denser at the centre, pellucid–striate, very faintly sulcate, dry, finely pruinose; margin straight, finely fringed. Lamellae adnexed, pure white, thin, 0.5–0.75 mm wide, subdistant, with lamellulae of 1–2 lengths; edge entire, concolourous with the sides. Stipe 3.5–22 × 0.25–0.5 mm, central, terete, tapering towards apex, hollow; surface translucent white, pubescent, more so towards the base, almost glabrous at apex; base discoid, with finely radiating basal mycelium. Context very thin, concolourous with the pileus surface. Odour and taste not distinctive.

Plate 1: *Mycena saloma*. A, basidioma (holotype); B, basidiospores (DM486); C, basidium (DM486); D, pileus marginal cystidium (DM486); E, caulocystidium (DM486); F, pileipellis (DM486); G, pileus hair (DM486). (Scale bars: A = 5 mm; B–G = 10 µm.)

Basidiospores 7.5–9.5(–11) × 3.75–5.5 (8.57 ± 0.68 × 4.45 ± 0.44) µm, Q = 1.66–2.4, Qm = 1.9, pip-shaped to ovo-ellipsoid, thin-walled, hyaline, smooth, with refractive guttules, strongly amyloid. Basidia 12–19 × 9.5–13 µm, subglobose, pedicellate, hyaline, bearing 4 sterigmata up to 5 µm long. Lamella-edge fertile. Cheilocystidia and pleurocystidia not seen. Lamellar trama regular to subregular; hyphae 2–15.5 µm, often inflated up to 30 µm, thin-walled, hyaline, faintly dextrinoid in Melzer's reagent; subhymenium pseudoparenchymatous. Pileus trama subregular; hyphae 3–26 µm wide, rarely inflated up to 37.5 µm, thin-walled, hyaline, distinctly dextrinoid in Melzer's reagent. Pileipellis a cutis of repent hyphae supporting scattered pileal hairs; hyphae 2–11.5 µm wide, thin- to slightly thick-walled (0.25 µm), hyaline, spinulose, with acanthophysoid terminal elements; excrescences 0.5–1.5 × 0.25–0.5 µm; acanthophysoid terminal elements 12–37 × 7–19 µm, repent or ascending, clavate to narrowly clavate or cylindrical, with refractive guttules and with excrescences 0.5–2 × 0.5–1 µm; pileal hairs 60–780 µm long, 15–30 µm broad at the base, 10–11 µm broad at the apex, gradually tapering towards the obtuse apex, smooth, hyaline, with a refractive wall 1–9 µm thick. Pileus margin beset with marginal cystidia; marginal cystidia 17–82 × 6.5–20 µm, clavate or fusiform, entirely spinulose or often with a smooth apical prolongation, thin-walled, hyaline; excrescences 0.75–4 × 0.75–1 µm. Stipitipellis a cutis; hyphae 2–8 µm wide, thin-walled, hyaline, smooth. Caulocystidia 92–125 × 15–33 µm, flexuoso-cylindric, fusoid or lageniform with a subconical apex, thin-walled, hyaline, smooth. Stipe trama strongly dextrinoid in Melzer's reagent. Clamp connections present on all hyphae.

Habitat: On dicotyledonous leaves and twigs, scattered; altitude: 1800–2000 m.

Additional specimen examined: **India**, **Kerala State**, Idukki District, Munnar, Eravikulam National Park: 16.VIII.2010, Dollymol DM486 (L).

Discussion: This species has all the diagnostic features of sect. *Longisetae* discussed earlier. The key by Desjardin et al. (2002) to species of *Mycena* sect. *Longisetae* leads to a couplet differentiating *M. breviseta* Höhn. and *M. longiseta* Höhn. *Mycena breviseta* is a poorly known species whose holotype collection is reported to contain 'no intact basidiomes and no pilei' (Desjardin et al. 2002). The Desjardin et al. (2002) key describes this Javan species as having an umbilicate pileus, pileal hairs that are up to 1000 µm long, and clavate marginal cystidia that are entirely spinulose. The closely related *M. longiseta,* also from Java, has a grey pileus and pileal hairs that are up to 1000 µm long. A perusal of *Mycena* literature revealed that the Brazilian species, *M. rhaphidocephala* (whose infrageneric position is discussed below but hitherto placed in sect. *Sacchariferae*), is strikingly similar to *M. saloma* in most macro- and microscopic features. An examination of the *M. rhaphidocephala* holotype

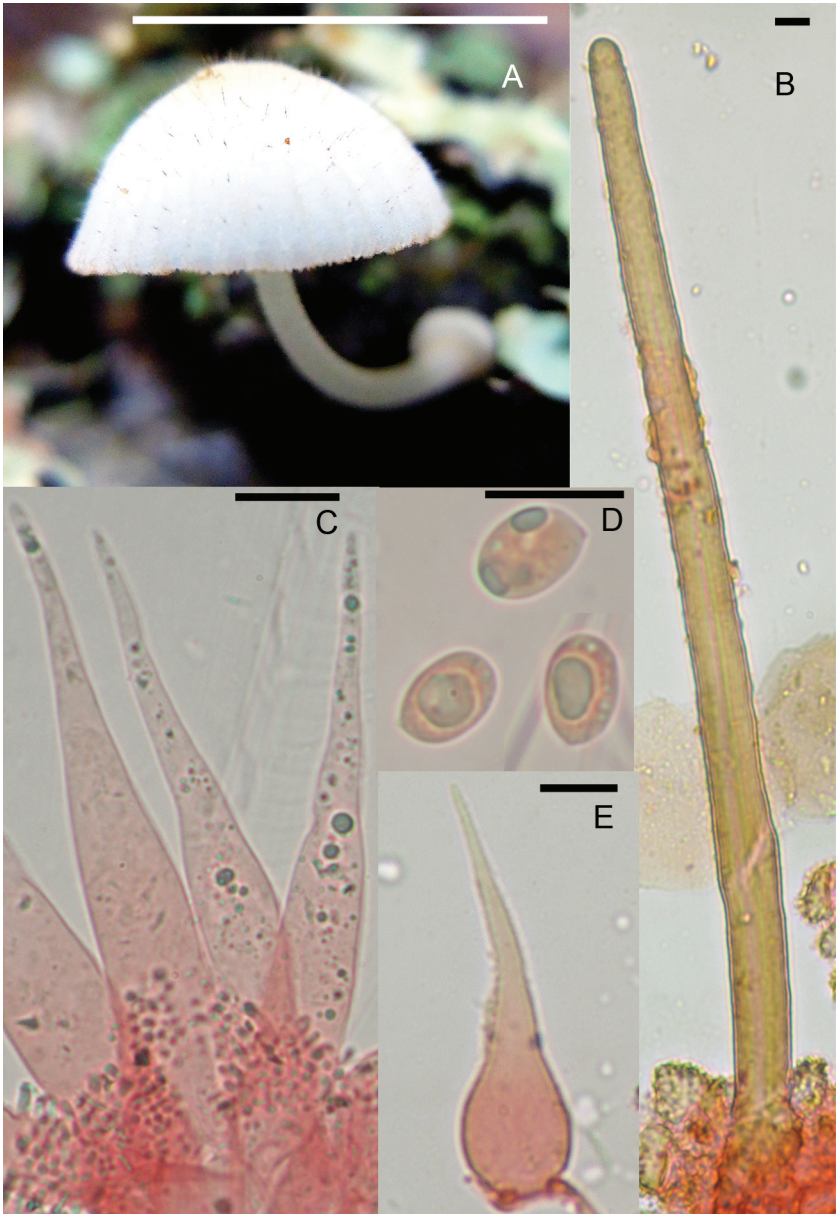

Plate 2: *Mycena lomavritha*. A, basidioma (AF70); B, pileus hair (DM423); C, cheilocystidia (DM423); D, basidiospores (DM423); E, caulocystidium (DM423).

(Scale bars: A = 5 mm; B–E = 10 µm.)

and protologue, however, revealed that it has pileal hairs that are much longer (up to 3000 µm), smooth pileipellis hyphae, well-developed acanthocysts, consistently lageniform caulocystidia, and clampless hyphae.

Mycena lomavritha Manim., **nom. nov.** PLATE 2

MYCOBANK MB 519882

≡ *Mycena indica* Manim. & Leelav., Mycologia 80(6): 861 (1989, "1988"), nom. illeg., non Sarwal & Rawla 1983.

ETYMOLOGY: *lomavritha* (Sanskrit), covered with hair.

DESCRIPTION AND ILLUSTRATIONS: Manimohan & Leelavathy (1989).

SPECIMENS EXAMINED: **INDIA**, **KERALA STATE**, MALAPPURAM DISTRICT, Calicut University campus: 6.VII.1987, Manimohan M383 (holotype TRTC 50991); 7.VI.2006, Dollymol DM13; PALAKKAD DISTRICT, Silent Valley National Park: 16.VI.2010, Dollymol DM423.

DISCUSSION: Thus far known only from southern India, *M. lomavritha* was originally described based on a single collection. Several collections were subsequently made by the present authors from Kerala State, India. All our observations support the original description except that the pileal trama was consistently dextrinoid. Also, while the original collection was found growing on the bark of a jackfruit tree, we found the species also growing on the bark of other trees. *Mycena lomavritha* is characterised by small off-white corticolous basidiomata with a hairy pileus and discoid stipe base, amyloid basidiospores, dextrinoid tramal tissues, ventricose-fusoid cheilocystidia with sparsely spinulose lower middle region, a pileipellis composed of acanthocysts as well as scattered thick-walled, aculeate hairs, and abundant obclavate caulocystidia.

Manimohan & Leelavathy (1988) placed this species in sect. *Sacchariferae* despite the thick-walled pileus hairs because sect. *Longisetae* then was characterized by inamyloid basidiospores, gelatinized pileipellis, and absence of clamp connections. Subsequently both sect. *Sacchariferae* (Desjardin 1995) and sect. *Longisetae* (Desjardin & Horak 2002) were redefined. As discussed by Desjardin et al. (2002), the combination of characters exhibited by *M. lomavritha* are clearly better accommodated in the redefined sect. *Longisetae,* where it seems close to *M. brunneisetosa* Corner from Singapore.

Mycena rhaphidocephala Maas Geest. & de Meijer, Persoonia 17: 39 (1998). PLATE 3

DESCRIPTION AND ILLUSTRATION: Maas Geesteranus & de Meijer (1998: 39–40, Fig. 7).

SPECIMEN EXAMINED: **BRAZIL**, **PARANA STATE**, Morretes, Porto do Cima, Parque Murumbi: 27.VI.1995, A.A.R. de Meijer MA-3098 (L, holotype).

DISCUSSION: This Brazilian species has all the characteristic features of the redefined sect. *Longisetae* such as the small off-white basidiomata, thick-walled aculeate hairs on the pileus, discoid stipe base, ellipsoid basidiospores,

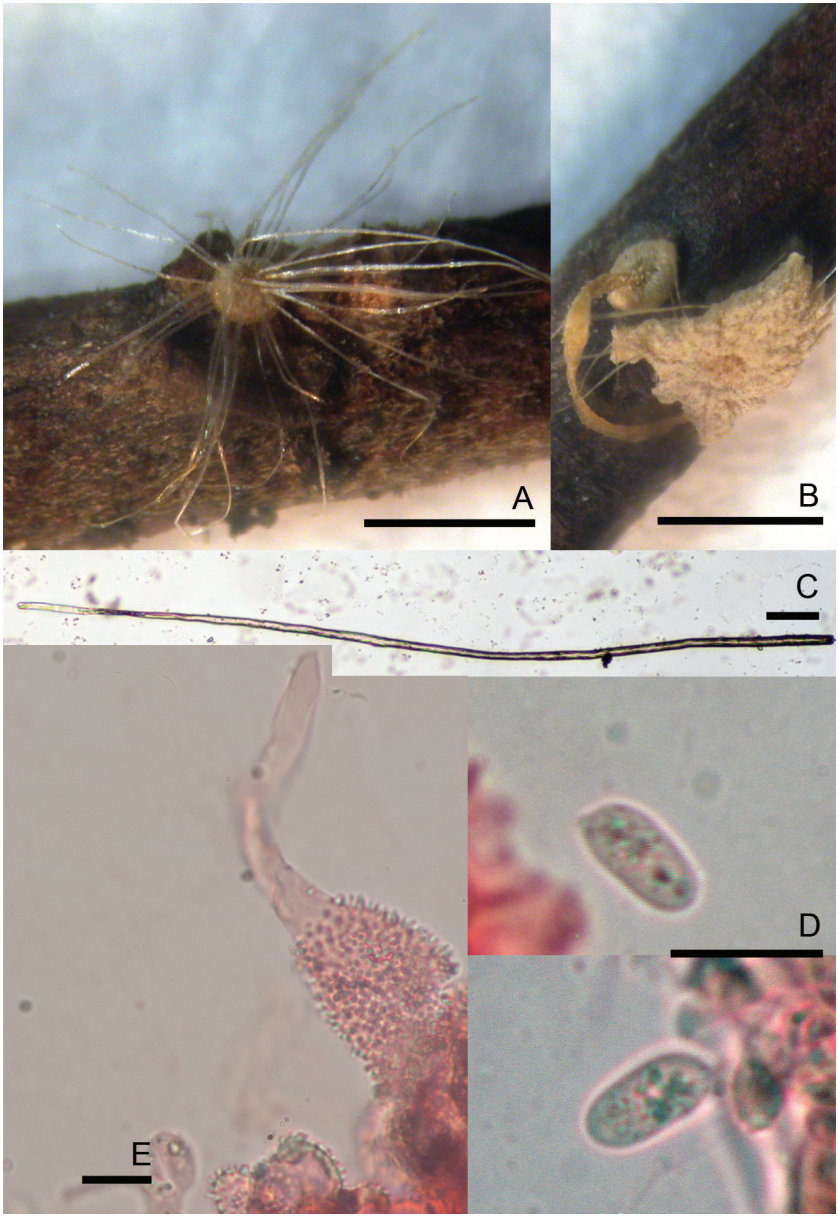

Plate 3: *Mycena rhaphidocephala* (holotype). A, primordium; B, mature basidioma; C, pileus hair; D, basidiospores; E, pileus marginal cystidia.

(Scale bars: A, B = 1 mm; C = 100 µm; D, E = 10 µm.)

acanthocysts on the pileipellis, spinulose marginal cystidia with a smooth apical prolongation, and smooth caulocystidia that taper towards the apex. We have verified these features on the holotype of this species. What Maas Geesteranus & de Meijer (1998) had described as cherocytes are actually the spinulose marginal cystidia typical of the sect. *Longisetae* (see Desjardin 1995: 5 for the history and definition of the term cherocyte). Our examination of these entities in the holotype revealed that they are thin-walled —not "somewhat thick-walled" as noted by Maas Geesteranus & de Meijer (1998)— and hence cannot be called cherocytes. Maas Geesteranus & de Meijer (1998), who originally placed this species in sect. *Sacchariferae,* noted that its combination of characters was not known in any other species of that section. We accept *M. rhaphidocephala* as a member of sect. *Longisetae*.

Acknowledgment

We are indebted to Prof. D.E. Desjardin and Dr D.J. Lodge for presubmission reviews of our manuscript. We are also thankful to Dr M.E. Noordeloos and the staff of the Nationaal Herbarium, Leiden Branch, for arranging a loan of the holotype of *Mycena rhaphidocephala*. Mr V. Adnaan Farook is thanked for letting us use his field photograph of *M. lomavritha* in this paper.

Literature cited

Desjardin DE. 1995. A preliminary accounting of the worldwide members of *Mycena* sect. *Sacchariferae*. Bibliotheca Mycologica 159: 1–89.

Desjardin DE, Horak E. 2002. *Agaricales* of Indonesia. 4. *Mycena* sect. *Longisetae* with comments on allied species. Sydowia 54: 142–156.

Desjardin DE, Boonpratuang T, Hywel-Jones NL. 2002. An accounting of the worldwide members of *Mycena* sect. *Longisetae*. Fungal Diversity 11: 69–85.

McNeill J, Barrie FR, Burdet HM, Demoulin V, Hawksworth DL, Marhold K, Nicolson DH, Prado J, Silva PC, Skog JE, Wiersema JH, Turland NJ (eds). 2006. International Code of Botanical Nomenclature (Vienna Code): adopted by the Seventeenth International Botanical Congress, Vienna, Austria, July 2005. A.R.G. Gantner Verlag, Ruggell.

Manimohan P, Leelavathy KM. 1989 ["1988"]. *Mycena indica*, a new species from southern India. Mycologia 80(6): 861–862. http://dx.doi.org/10.2307/3807569

Maas Geesteranus RA, de Meijer AAR. 1998. Further mycenas from the State of Paraná, Brazil. Persoonia 17: 29–46.

Thiers B. 2011 [continuously updated]. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. http://sweetgum.nybg.org/ih/